

Claim Amendments:

The following claim listing replaces all prior versions and listings of claims in the Application:

Claim listing:

1 1. (Currently Amended) A child resistant closure cap for a container, said cap
2 ~~including~~comprising:

3 an electrical generation means for generating and storing electrical energy;
4 at least one sensing means, being energized by said electrical generation
5 means, for detecting the biometric attributes of a user attempting to remove said
6 cap; and

7 a latching means operable by said at least one sensing means, for releasably
8 securing said child resistant closure cap to a container, in use.

1 2. (Currently Amended) A child resistant closure cap as claimed in claim 1,
2 wherein said electrical generation means ~~further~~ comprises a piezoelectric element.

1 3. (Original) A child resistant closure cap as claimed in claim 2, wherein said
2 piezoelectric element is formed from a suitable piezoceramic material or
3 polyvinylidene fluoride film.

1 4. (Currently Amended) A child resistant closure cap as claimed in ~~any of~~
2 ~~claims 2 or 3~~, wherein said electrical generation means further comprises a ratchet-
3 type mechanism for producing a repeatable dynamic force on said piezoelectric
4 element.

1 5. (Currently Amended) A child resistant closure cap as claimed in claim 4,
2 wherein said ratchet-type mechanism ~~further~~ comprises a piezoelectric element
3 located on a substrate or support plate which can turn freely within ~~the~~the said child
4 resistant closure cap.

1 6. (Currently Amended) A child resistant closure cap as claimed in claim 5,
2 wherein said ratchet-type mechanism further comprises a knob mounted on top of
3 said child resistant closure cap and ~~the action of rotating~~ said knob causes ~~the~~the said
4 substrate or support plate to meet with a number of deflection nodules located at
5 regular intervals inside ~~the~~a periphery of said cap, causing said support plate to be
6 ~~repeatedly~~ flexed and deformed repeatedly, which produces a large, regular
7 dynamic force on said piezoelectric element.

1 7. (Currently Amended) A child resistant closure cap as claimed in ~~any of~~
2 claims 2 ~~or 3~~, wherein said electrical generation means further comprises a flexible
3 piezoelectric element mounted on a support plate, which is located inside ~~a two-~~
4 ~~part~~the said child resistant closure cap.

1 8. (Currently Amended) A child resistant closure cap as claimed in claim 7,
2 wherein one end of ~~the~~the said flexible piezoelectric element and support plate is fixed
3 in one section of ~~the~~the said cap and ~~the other~~another end of ~~the~~the said flexible
4 piezoelectric element and support plate is fixed in a second movable section of
5 ~~the~~the said cap.

1 9. (Currently Amended) A child resistant closure cap as claimed in claim 8,
2 wherein ~~the action of aligning~~ both sections of ~~the two-part~~the said cap causes ~~the~~the said
3 flexible piezoelectric element to be flexed and distorted, which produces a large
4 electrical output.

1 10. (Currently Amended) A child resistant closure cap as claimed in ~~any of~~
2 claims ~~2 or 3~~, wherein said electrical generation means further comprises a
3 piezoelectric element interposed between two steel sections substantially formed as
4 a flat circular disc.

1 11. (Currently Amended) A child resistant closure cap as claimed in claim 10,
2 wherein said piezoelectric element and said steel sections are located on a number
3 of support elements which are positioned at regular intervals inside ~~the~~ a periphery of
4 the said child resistant closure cap.

1 12. (Currently Amended) A child resistant closure cap as claimed in claim 11,
2 further comprising an axle with a nut located thereon situated above ~~the said circular~~
3 disc and ~~the action of~~ rotating the said nut above said circular disc ~~in turn~~ deflects
4 the said piezoelectric element and said steel sections, which generates a large
5 electrical output.

1 13. (Currently Amended) A child resistant closure cap as claimed in ~~any of~~
2 claims ~~2 or 3~~, ~~further comprising a two-part~~ wherein said closure cap ~~having~~ has an
3 upper section, which is free to rotate above a fixed section, via an undulating contact
4 surface.

1 14. (Currently Amended) A child resistant closure cap as claimed in claim 13,
2 further comprising a substantially T-shaped member, which is connected to ~~the an~~
3 inner periphery of the said upper ~~movable~~ section of the said cap, which is situated
4 above the said piezoelectric element interposed between two steel sections
5 substantially formed as a flat circular disc.

1 15. (Currently Amended) A child resistant closure cap as claimed in claim 14,
2 wherein ~~the action of rotating the~~said upper section of ~~the~~said cap deflects ~~the~~said
3 piezoelectric element and said steel sections via ~~the~~said T-shaped member, which
4 generates a large electrical output.

1 16. (Currently Amended) A child resistant closure cap as claimed in claims
2 14 ~~or~~ 15, further comprising a resilient element interposed between ~~the~~said T-
3 shaped element and ~~the~~said piezoelectric element.

1 17. (Currently Amended) A child resistant closure cap as claimed in claim 1,
2 wherein said electrical generation means ~~further~~ comprises an electromechanical
3 generator.

1 18. (Currently Amended) A child resistant closure cap as claimed in claim 17,
2 wherein said electromechanical generator ~~further~~ comprises a coil linking a fixed
3 magnetic field to produce electrical energy.

1 19. (Currently Amended) A child resistant closure cap as claimed in ~~any~~
2 ~~preceding claim 1~~, wherein said electrical generation means further
3 ~~includes~~comprises a plurality of photovoltaic cells for converting light energy into
4 electrical energy.

1 20. (Currently Amended) A child resistant closure cap as claimed in ~~any~~
2 ~~preceding claim 1~~, wherein said electrical generation means ~~further~~ comprises a
3 self-winding mechanism, whereby ~~the action involved in~~ releasing and replacing said
4 cap provides a sufficient amount of electrical energy.

1 21. (Currently Amended) A child resistant closure cap as claimed in claim 1,
2 wherein said at least one sensing means ~~is provided using~~ comprises at least one
3 piezoelectric transducer, which performs both functions of detecting the biometric
4 attributes of said user and, by doing so, also generates and stores electrical energy
5 by virtue of the piezoelectric effect.

1 22. (Currently Amended) A child resistant closure cap as claimed in claim 21,
2 wherein said at least one sensing means further comprises a number of sensors
3 mounted on and around said child resistant closure cap for detecting the biometric
4 attributes of ~~the~~ a hand and fingers of the user attempting to remove said child
5 resistant closure cap.

1 23. (Currently Amended) A child resistant closure cap as claimed in ~~any~~
2 ~~preceding claim 1~~, wherein ~~said~~ the biometric attributes ~~include~~ comprise finger length
3 ~~or~~, finger thickness or any human dimensions that change with age.

1 24. (Currently Amended) A child resistant closure cap as claimed in ~~any~~
2 ~~preceding claim 21~~, wherein ~~the~~ a physical position of ~~the~~ said sensors is such that a
3 child or other minor would not be able to position his hand and fingers on all of the
4 sensors simultaneously to operate ~~the~~ said latching means.

1 25. (Currently Amended) A child resistant closure cap as claimed in claim 1,
2 wherein said at least one sensing means ~~further~~ comprises at least one pressure
3 transducer, which ~~can be implemented using~~ comprises at least one piezoelectric
4 transducer.

1 26. (Currently Amended) A child resistant closure cap as claimed in claim 25,
2 wherein said at least one piezoelectric transducer ~~would also perform the~~ a function
3 of said electrical generation means and ~~would be~~ is located on ~~the~~ a same substrate
4 as said electrical generation means.

1 27. (Currently Amended) A child resistant closure cap as claimed in claim 26,
2 further comprising a substrate containing an array of piezoelectric transducers ~~along~~
3 ~~with~~ and a surface storage capacitor, which forms an integral biometric sensor and
4 electrical generation means, and which could store and release sufficient electrical
5 energy to operate ~~the~~ said latching means.

1 28. (Currently Amended) A child resistant closure cap as claimed ~~an any~~
2 ~~preceding~~ in claim 1, wherein said at least one sensing means may comprise at least
3 one resistance, capacitance or conductivity sensor.

1 29. (Currently Amended) A child resistant closure cap as claimed in claim 1,
2 wherein said at least one sensing means ~~further~~ comprises a proximity sensor to ~~the~~
3 ~~term and the~~ determine a distance between ~~the~~ a top of ~~the~~ said cap and ~~the~~ a hand
4 crotch of the user.

1 30. (Currently Amended) A child resistant closure cap which, in use, is
2 adapted to engage with a container, comprising:
3 at least one piezoelectric transducer for detecting ~~the~~ biometric attributes of a
4 user attempting to remove said child resistant cap from ~~said~~ a container, and thereby
5 generating an electrical output; and
6 a latching means, being in connection with at least one piezoelectric
7 transducer, for releasably securing said child resistant cap to ~~said~~ the container.

1 31. (Currently Amended) A child resistant closure cap as claimed in ~~any~~
2 ~~preceding claim 1~~, wherein said cap is adapted to engage with ~~said~~the container via
3 a screw thread.

1 32. (Currently Amended) A child resistant closure cap as claimed in ~~any~~
2 ~~preceding claim 1~~, wherein said cap is formed from polypropylene or molded from a
3 suitable plastics material.

1 33. (Currently Amended) A child resistant closure cap as claimed in ~~any~~
2 ~~preceding claim 1~~, wherein said cap has physical dimensions compatible with
3 standard containers of pharmaceutical products, bleach or other products.

1 34. (Currently Amended) A child resistant closure cap as claimed in ~~any~~
2 ~~preceding claim 1~~, wherein said latching means only allows user access to ~~the~~
3 contents of ~~said~~the container after verification of their biometric attributes.

1 35. (Currently Amended) A child resistant closure cap as claimed in ~~any~~
2 ~~preceding claim 1~~, wherein said latching means comprises a spring-loaded pin,
3 which extends inwardly inside ~~the~~a periphery of said cap.

1 36. (Currently Amended) A child resistant closure cap as claimed in claim 35,
2 wherein, in an unlocked position, ~~the~~said pin is retained inside ~~the~~said cap by ~~use of~~
3 an electromagnetic solenoid or a piezoelectric actuator.

1 37. (Currently Amended) A child resistant closure cap as claimed in claim 35,
2 wherein, in a locked position, ~~the~~said pin extends outwardly into an aperture located
3 in the container.

1 38. (Currently Amended) A child resistant closure cap as claimed in claim 35,
2 wherein said latching means ~~will always~~ defines a 'fail-safe' ~~as, position in the~~
3 absence of an electrical signal to ~~the~~ an actuator, ~~the~~ wherein said spring-loaded pin
4 is forced in ~~the~~ an aperture in said cap and ~~the~~ said cap cannot be removed.

1 39. (Currently Amended) A child resistant closure cap as claimed in ~~any~~
2 ~~preceding claim 1~~, wherein ~~said~~ latching means ~~is incorporated inside a two-part~~
3 ~~child resistant closure cap and includes~~ comprises a mechanism, which extends
4 between ~~the~~ an inner section and an outer sections of ~~said two-part~~ cap.

1 40. (Currently Amended) A child resistant closure cap as claimed in claim 39,
2 wherein, in a locked position, ~~the~~ said mechanism is such that ~~the~~ said outer section
3 of ~~the~~ said cap does not cooperate with ~~the~~ said inner ~~part~~ section of ~~the~~ said cap,
4 which, ~~in turn~~, is engaged ~~to the~~ with a screw thread of the container.

1 41. (Currently Amended) A child resistant closure cap as claimed in claim 39,
2 wherein, in an unlocked position, ~~the~~ said mechanism is such that ~~the~~ said inner and
3 outer sections of ~~the~~ said cap cooperate ~~with each other~~ and the user can unscrew
4 ~~the~~ said cap from ~~said the~~ container.

1 42. (Currently Amended) A child resistant closure cap as claimed in ~~any~~
2 ~~preceding claim 1~~, further comprising an audible sounder to warn that an
3 unauthorized access by a child has been attempted.

1 43. (Currently Amended) A child resistant closure cap as claimed in claim 42,
2 wherein ~~said~~ audible sounder ~~further~~ comprises an electromagnetic or piezoelectric
3 sounder.

1 44. (Cancelled).

1 45. (Cancelled).

1 46. (New) A child resistant closure cap as claimed in claim 30, wherein said
2 cap is adapted to engage with the container via a screw thread.

1 47. (New) A child resistant closure cap as claimed in claim 30, wherein said
2 cap is formed from polypropylene or molded from a suitable plastics material.

1 48. (New) A child resistant closure cap as claimed in claim 30, wherein said
2 cap has physical dimensions compatible with standard containers of pharmaceutical
3 products, bleach or other products.

1 49. (New) A child resistant closure cap as claimed in claim 30, wherein said
2 latching means only allows user access to contents of the container after verification
3 of the biometric attributes.

1 50. (New) A child resistant closure cap as claimed in claim 30, wherein said
2 latching means comprises a spring-loaded pin, which extends inwardly inside a
3 periphery of said cap.

1 51. (New) A child resistant closure cap as claimed in claim 50, wherein, in an
2 unlocked position, said pin is retained inside said cap by an electromagnetic
3 solenoid or a piezoelectric actuator.

1 52. (New) A child resistant closure cap as claimed in claim 50, wherein, in a
2 locked position, said pin extends outwardly into an aperture located in the container.

1 53. (New) A child resistant closure cap as claimed in claim 50, wherein said
2 latching means defines a 'fail-safe' position in absence of an electrical signal to an
3 actuator, wherein said spring-loaded pin is forced in an aperture in said cap and said
4 cap cannot be removed.

1 54. (New) A child resistant closure cap as claimed in claim 30, wherein said
2 latching means comprises a mechanism, which extends between an inner section
3 and an outer section of said cap.

1 55. (New) A child resistant closure cap as claimed in claim 54, wherein, in a
2 locked position, said mechanism is such that said outer section of said cap does not
3 cooperate with said inner section of said cap, which is engaged with a screw thread
4 of the container.

1 56. (New) A child resistant closure cap as claimed in claim 54, wherein, in an
2 unlocked position, said mechanism is such that said inner and outer sections of said
3 cap cooperate and the user can unscrew said cap from the container.

1 57. (New) A child resistant closure cap as claimed in claim 30, further
2 comprising an audible sounder to warn that an unauthorized access by a child has
3 been attempted.

1 58. (New) A child resistant closure cap as claimed in claim 57, wherein said
2 audible sounder comprises an electromagnetic or piezoelectric sounder.